

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/015563

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F04C18/00 C23C16/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C23C F04C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/023229 A (ULVAC, INC; SHIBAYAMA, KOUJI; YAMASHITA, YUUCHI; YAHAGI, MITSURU; TAS) 20 March 2003 (2003-03-20) abstract	1-5
P, X	-& US 2004/173312 A1 (SHIBAYAMA KOUJI ET AL) 9 September 2004 (2004-09-09) paragraphs '0040!', '0041!', '0069!', '0080!', '0095!', '0102!'	1-5
A	US 2002/090310 A1 (IZAWA HIROSHI) 11 July 2002 (2002-07-11) paragraph '0048!; figure 5	1
A	EP 1 130 264 A (THE BOC GROUP PLC) 5 September 2001 (2001-09-05) paragraph '0010!; figure 1	1, 5
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

28 June 2005

Date of mailing of the international search report

08/07/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Castagné, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/015563

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 03/033761 A (LEYBOLD VAKUUM GMBH; MUELLER, PETER; ARNDT, LUTZ) 24 April 2003 (2003-04-24) figure 4 -----	2
A	US 2003/097985 A1 (KITAZAWA TAKASHI) 29 May 2003 (2003-05-29) paragraph '0032! -----	4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/015563

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03023229	A	20-03-2003	JP 2003155988 A	30-05-2003
			JP 2003129957 A	08-05-2003
			JP 2003139056 A	14-05-2003
			JP 2003139080 A	14-05-2003
			CN 1541307 A	27-10-2004
			WO 03023229 A1	20-03-2003
			US 2004173312 A1	09-09-2004
US 2004173312	A1	09-09-2004	JP 2003155988 A	30-05-2003
			JP 2003129957 A	08-05-2003
			JP 2003139056 A	14-05-2003
			JP 2003139080 A	14-05-2003
			CN 1541307 A	27-10-2004
			WO 03023229 A1	20-03-2003
US 2002090310	A1	11-07-2002	JP 2002188589 A	05-07-2002
EP 1130264	A	05-09-2001	AT 257911 T	15-01-2004
			DE 60101752 D1	19-02-2004
			DE 60101752 T2	23-09-2004
			EP 1130264 A2	05-09-2001
			JP 2001304161 A	31-10-2001
			US 2001051101 A1	13-12-2001
WO 03033761	A	24-04-2003	DE 10150015 A1	17-04-2003
			CA 2462934 A1	24-04-2003
			DE 20121634 U1	20-03-2003
			WO 03033761 A2	24-04-2003
			EP 1434896 A2	07-07-2004
			JP 2005505697 T	24-02-2005
			US 2005000436 A1	06-01-2005
US 2003097985	A1	29-05-2003	JP 2003161281 A	06-06-2003
			JP 2003229417 A	15-08-2003